

SOME JUNGLE BIRD ASSOCIATIONS

BY

M. D. LISTER

(*With a map*)

This paper contains a short comparative account of the birds found by the writer in such of the major forest types in India and Burma as he happened to visit during the years 1942-1945.

During the last 6-7 decades much work has been done in the study of forest classification throughout the world. The most comprehensive survey of the types occurring in India and Burma is that published by Mr. H. G. Champion (1936) who puts forward a tentative classification of the main forest types based on four temperature zones, tropical, sub-tropical, temperate and alpine, each subdivided according to the available amount of moisture as reflected by the relative importance of ever-green, deciduous and thorny trees. Important edaphic variations as well as certain primary and secondary seral types are also listed.

A given square mile of country in any of the major forest types may contain several distinct sub-types as well as edaphic or seral variants and an ideal comparative study of the avifauna would cover concurrently large areas of each main type, including examples of all the major components, for long periods at all seasons of the year. Such a survey would be a very big undertaking requiring the co-operation of many observers, but until it is possible to organise such a survey preliminary information can be collected from smaller surveys of more limited areas. In the present case no properly controlled survey was possible, and the present records were derived from various incomplete samples of varying duration, made at different seasons under very varying conditions. The comparisons, therefore, are by no means complete, but they may perhaps have some value as a pointer for later work.

Certain minor habitat types within the major ones, e.g. tanks, have not been treated separately in this paper, as it was well-nigh impossible to separate them satisfactorily in the circumstances under which the surveys were made, and this accounts for the presence in the lists of such unexpected species as terns, which may perhaps have been seen at an isolated tank surrounded by a considerable area of jungle. Soaring and high flying birds have been included as these obtain much of their food directly or indirectly from the jungle.

The classification of forests here adopted is that contained in Mr. Champion's paper.¹ The writer was not aware of that paper until after he had left India and he has been unable to establish beyond doubt to which sub-type the various areas of jungle under survey belonged.

¹ CHAMPION, H. G. (1936). 'A Preliminary Survey of the Forest Types of India and Burma'. *Ind. For. Rcds. (New Series), Sylviculture*, Vol. 1, No. 1, 1-287.

SUMMARY OF SURVEYS MADE

I. MOIST TROPICAL FORESTS

- A. *Tropical Wet Evergreen Forest*: 1. Myitkyina (a) forest
(b) scrub.
- B. *Tropical Semi-evergreen Forest*: 2. Jessore (a) forest
3. Dhubalia (a) forest
- C. *Tropical Moist Deciduous Forest*: 4. Ramgarh (a) forest
5. Digri (a) forest
(b) scrub.

II. DRY TROPICAL FORESTS

- D. *Tropical Dry Deciduous Forest*: 6. Monywa (a) forest
(b) scrub
- E. *Tropical Thorn Forest*: { 7. Ambala (a) forest
8. Delhi (a) forest
(b) scrub
9. Okhla (b) scrub

III. MONTANE SUB-TROPICAL FORESTS

- F. *Sub-tropical Wet Hill Forest*: 10. Darjeeling (a) forest

I. MOIST TROPICAL FORESTS

A. *Tropical Wet Evergreen Forest*

1. Myitkyina, North Burma: Position: $25^{\circ} 30' N \times 97^{\circ} 25' E$
Altitude: approx. 470' A.S.L. Period of survey:
24-27 March, 1945; almost continuous observation. Locality:
although the forest in much of the surrounding country is of this
type, the only subtypes visited here were a small citrus orchard
and an area of scrub. The latter was, I think, clearly a seral form
of vegetation as it lay to a great extent on the bed of a fairly
recently dried-up meander of the Irrawaddy. The vegetation
may also have been influenced by the felling of the larger
trees to provide a clear air approach to the landing ground.
which lay between the bed of the meander and the main
river.

(a) Tree Forest: Some 5-6 acres of overgrown citrus orchard
on the right bank of the Irrawaddy. Some trees cut down to make room
for huts and tents. Some rough thin bushes round the edges with a few
teak (*Tectona grandis*) and (?) *Bombax* trees.

(b) Scrub: A large area of dense scrub, in places consisting of
fairly large bushes with a sprinkling of trees of medium size, including a
few bamboos and (?) *Bombax*; in other places the vegetation consisted
of considerable areas of a leafless woody scrub of medium height,

almost like some sort of crop (not identified). The whole area was intersected by several paths and grassy rides. One long visit of several hours on foot. Major battles had recently been fought in this area and signs of this were still very obvious.

B. *Tropical Semi-evergreen Forest*

2. Jessore, Lower Bengal: Position: $23^{\circ} 11' N \times 89^{\circ} 10' E$. Inland portion of delta area. Altitude: 20' A.S.L. Period of survey: 14 April, 1943—9 Sept., 1944 (with three breaks of a fortnight each and one in Sept., 1943 of a month). Locality: this probably lies in Champion's C4 category (Chittagong Tropical Evergreen Forest). There were considerable areas of mature forest, though some patches, judging by the absence of large trees, were only of a secondary nature and in many places the forest was very broken. The greater part of the district is devoted to rice growing, with some jute, and the vegetation was always very luxuriant.

(a) Tree Forest: The whole of this area of several square miles consists of extensive stretches of paddy and jute fields round a small, well-wooded Indian town, set in a matrix of patchily dense jungle. Dominant trees in many of the jungle patches were mango (*Mangifera indica*), bamboos (? species), with coconut palms (*Cocos nucifera*), date palms (*Phoenix sylvestris*), but many other trees were also well represented, including red silk cotton (*Bombax malabaricum*), banyan (*Ficus bengalensis*), jackfruit (*Artocarpus integrifolia*), and litchi (*Nephelium litchi*). The undergrowth varied from very dense to only a few scattered babool (*Acacia arabica*) bushes at the edge. Some patches of this mixed jungle, I think, probably represented the climatic climax, but more often, judging from the absence of really mature trees, they were only of a secondary seral nature, representing a small residue of the original jungle (the larger figs, mangoes &c) mixed with younger regeneration growth after considerable human interference.

The roads were nearly all bordered with trees and in some places bushes and patches of jungle. Here the dominant trees were, in most places, peepal (*Ficus religiosa*), in one place I think tamarind (*Tamarindus indicus*), with a smaller proportion of babool, banyan, mango and coconut and palmyra palms (*Borassus flabelliformis*). Small groves of palms were scattered all over the paddy fields, usually with no undergrowth and the paddy growing beneath them.

The whole of the urban area is liberally sprinkled with tanks, but it was not practicable to treat these as a separate habitat; their avifauna, if indeed they really have a distinct one, is usually submerged in that of the major habitat in which they are situated.

3. Dhubalia, Lower Bengal; Position: $23^{\circ} 30' N \times 88^{\circ} 27' E$. Lower Gangetic Plain. Altitude: about 45' A.S.L. Period of survey: 11 Sept.—11 Dec., 1944 (except 10-31 Oct.). Locality lies 60-70 miles W.N.W. of Jessore and much nearer to the Tropical Moist Deciduous Forest region. I think it is rather drier than Jessore, though temperature and rainfall data (q.v.)

were not available for the whole year, and the vegetation rather less luxuriant, with the forest more patchy and broken.

(a) **Tree Forest:** The whole countryside is broken up by rough, untidy 'hedges' and small patches of mixed jungle consisting of large straggling bushes growing in a dense tangle, with trees of various kinds. Some of the 'hedges' were swollen into considerable belts of bushes. Undergrowth varied from place to place. Dominant trees difficult to determine, but tamarind (*Tamarindus indicus*), Mango and various palms, including palmyras, probably predominated. My bungalow stood under the dense canopy of a large mango grove (1½–2 acres) with only a little undergrowth at the extreme edges. I think that none of the jungle seen here represented the climatic climax, and that it consisted of a secondary seral type interspersed in a few places with the sub-type called by Champion 'Gangetic Saline Scrub'.

I have already dealt more fully with the birds seen at Jessore and Dhubalia in 'Some Bird Associations of Bengal' (*J. Bomb. N. H. S.* Vol. 49 (4), April, 1951).

C. *Tropical Moist Deciduous Forests*

4. Ramgarh, Bihar: Position: $23^{\circ} 38'N \times 85^{\circ} 34'E$. Altitude: approx. 2,000' A.S.L. Period of survey: 25 May–3 June, 1942; almost continuous observation. Locality: The jungle here was richer, higher, denser and more varied than at Digri, and I suspect that it represented the climatic climax, but I was not qualified to identify any of the trees with certainty.

(a) **Tree Forest:** A large camp carved out of rather light, deciduous woodland with bushes (? *Laureaceae*) and many trees of varying size (including some *Ficus* and a very few palms). The whole terrain was rough and irregular with many nullahs. The value of the survey here was greatly limited owing to my unfamiliarity with the species seen, as I had only just arrived in India.

5. Digri, S. W. Bengal: Position: approx. $22^{\circ} 47'N \times 87^{\circ} 23'E$. Altitude: about 200' A.S.L. Period of survey: 8 March–8 April, 1943. Locality: this was in an area of Sal (*Shorea robusta*) forest (probably Champion's 'Wet Sal'), with small patches of larger mixed trees.

(a) **Tree Forest:** Some 50 acres of light woodland with many bamboos (? species) some 20–30' high, and a good sprinkling of larger deciduous trees of various kinds (including some large *Ficus*). A fair number of thatched busti huts under the trees, and some Mess kitchens whose refuse was a great attraction to the ubiquitous Pariah Kites. Also considerable patches of sal, 25–30' high, which were under only occasional observation from near the edge and so not worth treating separately.

(b) **Scrub:** About 1 square mile of fairly level, rough, broken ground, about 40% of which was covered with low, thorny scrub; bushes nowhere more than 2–3' high. Sparse, patchy grass and weeds in the

open ground between the scrub. Daily observation, usually from an open truck or motor cycle, but sometimes on foot.

II. DRY TROPICAL FORESTS

D. *Tropical Dry Deciduous Forest*

6. Monywa, Lower Chindwin, Burma: Position: $22^{\circ}00'N \times 95^{\circ}05'E$. Altitude: approx. 300' A.S.L. Period of survey: 3-6 March, 1945 and 30 March-2 April, 1945. Fairly continuous observation. Locality: lies near northern end of the dry zone of Burma and not far to the south of the Tropical Moist Deciduous Forest region. None of the area I visited appeared to have any climatic climax forest.

(a) Tree Forest: An extensive area composed of a mixture of more or less derelict compounds about the edge of the town, all well-wooded, mostly with light-leaved trees of the *Acacia* type (though other species were quite well represented); of roadside trees of various kinds, and clumps and whole areas of bushes and scrub. Also a stretch of road out to the aerodrome some 2-3 miles long, bordered on each side by a continuous line of trees, predominantly neem (*Melia*), and here and there a tamarind (*Tamarindus indicus*), an occasional babool (*Acacia arabica*) and a few other species; there was also a light thorn hedge bordering much of the road. Frequent visits, usually in an open truck.

(b) Scrub: About 10 acres of rough grass, with a patchy growth of low scrub and a sprinkling of larger thorn bushes (not identified). Daily visits on foot.

E. *Tropical Thorn Forest*

7. Ambala, Punjab: Position: $30^{\circ}25'N \times 76^{\circ}50'E$. Altitude: about 900' A.S.L. Period of survey: 7 July-5 Aug., 1942. Several visits. Locality: lies very near the Tropical Dry Deciduous Forest region.

(a) Tree Forest: A small plain about $\frac{1}{2}$ mile \times $\frac{1}{2}$ mile, covered with babool trees, a few of which were in flower. Ground covered with grass on which cattle, goats, etc., were grazed. No undergrowth. A few other species of trees growing round the edges.

8. New Delhi: Position: $28^{\circ}45'N \times 77^{\circ}20'E$. Altitude: 718' A.S.L. Period of survey: 15 August-29 December 1942. Frequent observation. Locality lies near the junction of this type with the Tropical Dry Deciduous Forest region and area (1) below is probably more representative of that kind.

(a) Tree Forest: (1) Rough deciduous woodland with mixed trees and a few palms. Many *Acacia arabica*. Fairly dense low undergrowth.

(2) Part of the golf course, including : (i) a patch of light deciduous woodland with a fair amount of undergrowth, in places low and thin, in others tall and dense and including a fair number of climbers. (ii) Another patch of open deciduous woodland with no undergrowth except rough grass and weeds and a few small bushes at the edge (5 acres), and a patch of some 5 acres of much denser light deciduous woodland (chiefly *Acacia arabica*) with a good deal of undergrowth, and about 10 acres of rough grassland with isolated trees and bushes varying from semi-scrub, a foot or so high, to thorn and bramble bushes 12-15' high. Part of this area was subject to disturbance from September onwards when a large tented camp was erected on it. (iii) The golf course proper, consisting of fairly rough grass bordered by a thick growth of deciduous trees and dense patches of bushes in which stood small scattered ruins. It was not practicable to treat the grass as an entirely separate habitat from the surrounding jungle.

(3) A large patch of fairly dense deciduous woodland (almost entirely an *Acacia* known locally as Kabul Babool, whose species I never discovered), standing 15-20' high, with a scattering of other trees. The canopy was so dense in most places that nothing would grow under it except a little sparse, weak grass, though most of the branches were high enough for a man to be able to walk upright under them. A certain amount of interlacing rough open ground running through the wood, with rough grass and a few bushes, and many tiny interlacing ponds only a yard or two across with here and there a larger one. Most of these ponds were empty though damp and covered with moss and herbage ; no doubt during the rainy season this area becomes a bog.

(b) Scrub: A patch some 300 × 400 yds. of thorn bushes of the drooping or 'weeping' kind (? a kind of *Acacia*), of average height 8-10 ft. and quite impenetrable except along cart tracks. Here and there an *Acacia arabica* and a fair sprinkling of a low-growing tamarisk (? *T. gallica*) in the more open parts. Probably Champion's 'Dry Deciduous Scrub Forest'. Observation was confined to the limits of vision from the cart tracks.

9. Okhla, near Delhi: Position : some 7-8 miles S.E. of New Delhi. Altitude : about 700' A.S.L. Period of survey : a single visit of several hours devoted to observation on 1st November 1942. Locality : as for New Delhi.

(b) Scrub ; a dense belt of scrub and bushes (not identified), 50-100 yards wide along the top of the river bank. In most places impenetrable. Some tamarisk and a few tamarind trees.

III. MONTANE SUB-TROPICAL FORESTS

F. *Sub-tropical Wet Hill Forest*

10. Darjeeling, North Bengal : Position : 27° 03'N × 88° 18' E. Altitude of areas surveyed : 1,800-6,500' A.S.L., though preponderance of observation was 3,000-6,000'. Periods of survey : I paid 7 visits to 3 tea gardens near Darjeeling, lasting 2-4 weeks each in the months of January,

February, March, April, May, June and October, and almost the whole of this time was spent in bird watching. Locality : although Darjeeling itself lies in the Montane Temperate Forest Region, the tea gardens on which most of my observation was done lay well below it and should, I think, be included in this category under Champion's 'Upper Bengal Sub-tropical Hill Forest' type.

(a) Tree Forest : All these three tea estates were basically similar in that they consisted of patches of tea bushes [*Camellia thea* (Link)] of varying extent, set in a matrix of mixed jungle on the steep hillsides. They differed in the proportions of tea to jungle, total acreage, aspect, in the use of shade trees and leguminous plants interplanted among the tea, in the intensiveness of the forestry methods practised, and such minor points as the turfing or walling of the terraces on which the tea was planted. The hillsides were frequently broken with small jungle-clad ravines with small streams.

The jungle was for the most part a widely varied mixture of deciduous trees and it was difficult to say just what species predominated. Utis (*Betula alnoides*) and toon (*Cedrela toona*) were usually well represented, and here and there were small patches of bamboos (? species). In some places were *Cryptomerias* growing in groves or clumps or as isolated trees. Undergrowth varied from barely any to a dense covering of bushes and brambles, with here and there a tree fern. Luxuriant herbage sprang up during the rainy season.

I have included the tea in this type as the tea plantations and the jungle were so intermixed as to be almost inseparable as distinct habitats with any degree of accuracy, and most of the birds to be found in the one could also be seen, at any rate at times, in the other. The chief shade trees interplanted among the tea were Sau or Black Siris (*Albizia stipulata*) and Koroi or White Siris (*A. procera*). The principal leguminosae interplanted were Indigofera (*I. dosua*), Boga Medeloa (*Tephrosia candida*) and in some places *Crotellaria*.

I have not thought it worth while to give comparative lists for these three gardens, and a single composite list for the Darjeeling area has therefore been included in the main comparative Table.

CLIMATE

Myilkyina :

Temp. °F...	J.	F.	M.	A.	M.	J.	Jy.	A.	S.	O.	N.	D.	Year.
Mean max. ...	74	78	85	89	92	88	87	87	90	86	80	75	...
Mean min. ...	50	54	61	67	73	75	76	76	76	71	61	52	...
Rainfall ...	0.4	0.9	0.9	2.0	6.0	15.1	19.2	16.4	9.7	6.8	1.2	0.4	79.0"

Months with less than 2" of rain—5.

Jessore : April 1943 to September 1944.

Temp. °F.	—	—	—	91	95	—	84	89	90	91	86	80	—
Mean max. ...	73	79	84	92	98	91	89	88	—	—	—	—	—
Mean min. ...	—	—	—	71	77	—	77	77	78	73	60	56	—
Rainfall ...	53	57	64	73	79	78	79	78	—	—	—	—	—
	5.8	1.1	3.5	4.5	3.0	4.6	13.5	13.3	—	—	—	—	77.0"

Months with less than 2" of rain : 3.

Dhubalia : September—November 1944 only. No other records available.

Temp. °F.	J.	F.	M.	A.	M.	J.	Jy.	A.	S.	O.	N.	D.	Year.
Mean max. ...	—	—	—	—	—	—	—	—	90	88	84	—	—
Mean min. ...	—	—	—	—	—	—	—	—	78	72	56	—	—
Rainfall ...	—	—	—	—	—	—	—	—	2.6	1.0	0.0	—	—

Monywa : Nearest available station—Mandalay (250 ft. A.S.L.)

Temp. °F.													
Mean max. ...	84	90	98	102	101	94	93	92	90	92	94	94	106
Mean min. ...	59	60	69	81	82	79	79	78	78	75	68	62	53
Rainfall ...	0.1	0.1	0.2	1.1	5.9	5.5	5.3	4.6	5.7	4.7	1.6	0.4	33.2"

Months with less than 2" of rain : 6. Mean annual humidity 64.

Ambala : No information available to me.

Delhi :

Temp. °F.													
Mean max. ...	71	75	88	99	104	105	95	94	94	92	83	74	116
Mean min. ...	48	52	62	72	78	84	81	80	77	68	56	49	40
Rainfall ...	1.0	0.5	0.7	0.4	0.7	3.4	8.5	6.9	4.5	0.5	0.1	0.4	27.6"

Months with less than 2" of rain : 8. Mean annual humidity 51.

Ramgarh : no information available to me.

Digri : do. do. do.

Darjeeling (at 6,912 ft) :

Temp. °F.													
Mean max. ...	50	53	61	67	68	69	70	70	69	66	60	54	78
Mean min. ...	35	37	44	50	53	58	59	59	57	51	43	37	30

Rainfall—no record.

Only fragmentary records are available to me from the three tea gardens at which I stayed.

COMPARATIVE TABLE

showing the occurrence of species
in Tree and Scrub Jungle in the
various places surveyed.

The following symbols have been used :

* = definite, beyond any doubt.

† = probable, but not definite, identification.

⊙ = possible identification.

△ = reported by someone else, but not actually seen by me.

The scientific names are in the main those given in the 2nd edition of *The Fauna of British India Birds*. The columns should be read in conjunction with the Summary of Surveys Made on pp. 574–580.

Species	I						II						III
	A		B		C		D		E			F	
	Myitkyina		Jessore	Dhubalia	Rangarh	Digri	Monywa		Ambala	Delhi	Okhla	Darjeeling	
	a	b	a	a	a	a	b	a	b	a	b	b	a
Jungle Crow (<i>Corvus macrorhynchos</i>)	...	*		*	*	*			*				*
House Crow (<i>Corvus splendens</i>)	...	*		*	*	*	*		*	*		*	*
Red-billed Blue Magpie (<i>Urocissa erythrorhyncha</i>)	...	*	*										
Yellow-billed Blue Magpie (<i>Urocissa flavirostris</i>)	...												*
Green Magpie (<i>Cissa chinensis</i>)	...												*
Tree Pie (<i>Dendrocitta vagabunda</i>)	...			*	*	*		*		*			
Himalayan Tree Pie (<i>Dendrocitta formosae</i>)	...												*
Indian Grey Tit (Note 1) (<i>Parus major</i>)	...			*	*	*							†
Green-backed Tit (<i>Parus monticolus</i>)	...												*
Yellow-cheeked Tit (<i>Machlolophus xanthogenys</i>)	...					⊙							†
Red-headed Tit (<i>Aegithaliscus concinnens</i>)	...												*
Sultan Tit (<i>Melanochlora sultanea</i>)	...												*
Cinnamon-bellied Nuthatch (<i>Sitta castanea</i>)	...												*
Velvet-fronted Nuthatch (<i>Sitta frontalis</i>)	...												*
Rufous-necked Laughing Thrush (<i>Dryonastes ruficollis</i>)	...												*
Grey-sided Laughing Thrush (<i>Dryonastes caerulatus</i>)	...												†
Black-gorgetted Laughing Thrush (<i>Garrulax pectoralis</i>)	...												†
Necklaced Laughing Thrush (<i>Garrulax moniliger</i>)	...												†
White-throated Laughing Thrush (<i>Garrulax albogularis</i>)	...												*
Rufous-chinned Laughing Thrush (<i>Lanthocincla rufogularis</i>)	...												†
Red-headed Laughing Thrush (<i>Trochalopteron erythrocephalum</i>)	...												*
Crimson-winged Laughing Thrush (<i>Trochalopteron phoeniceum</i>)	...												†
Striated Laughing Thrush (<i>Grammatoptila striata</i>)	...												†
Jungle Babbler (<i>Turdoides terricolor</i>)	...			*	*	*			*	*	*	*	

[illegible]

Species	I					II				III
	A		B	C		D	E		F	
	Myitkyina	Jessore	Dhurbalia	Ramgarh	Digri	Monywa	Ambala	Delhi	Okhla	Darjeeling
	a	b	a	a	a	b	a	b	b	a
Small Niltava (<i>Niltava macgrigorae</i>)	...									*
Paradise Flycatcher (<i>Tchitreia paradisi</i>)	...		*	*	*					
Black-naped Flycatcher (<i>Hypothymis azurea</i>)	...		*	*						⊙
Yellow-bellied Flycatcher (<i>Chelidorhynch hypoxanthum</i>)	...									*
White-browed Fantail Flycatcher (<i>Leucocirca aureola</i>)	...		*	*				*		
White-throated Fantail Flycatcher (<i>Leucocirca albicollis</i>)	...									*
Indian Grey Shrike (<i>Lanius excubitor</i>)	...							*	*	
Bay-backed Shrike (<i>Lanius villatus</i>)	...		*					*		
Burmese Shrike (<i>Lanius collurioideus</i>)	...	*				*	*			
Black-headed Shrike (<i>Lanius nigricaps</i>)	...		*							*
Rufous-backed Shrike (<i>Lanius schach erythronotus</i>)	...		*					*		
Grey-backed Shrike (<i>Lanius schach tephronotus</i>)	...	*								*
Brown Shrike (<i>Lanius cristatus</i>)	...	*		*						
Brown-backed Pied Shrike (<i>Hemipus picatus capitalis</i>)	...									*
Nepal Wood Shrike (<i>Tephrodornis gularis</i>)	...									*
Indian Common Wood Shrike (<i>Tephrodornis pondiceriana</i>)	...		*	*						*
Scarlet Minivet (<i>Pericrocotus flammeus</i>)	...									*
Short-billed Minivet (<i>Pericrocotus brevirostris</i>)	...									*
Small Minivet (<i>Pericrocotus peregrinus</i>)	...		*	*	⊙			*		
Dark Grey Cuckoo Shrike (<i>Lalage melaschista</i>)	...									*
Ashy Swallow Shrike (<i>Artamus fuscus</i>)	...		*	*						*
Black Drongo (<i>Dicrurus macrocerus</i>)	...	*	*	*	*	*	*	*	*	*
Grey Drongo (<i>Dicrurus leucophaeus</i>)	...							*		*
White-bellied Drongo (<i>Dicrurus coerulescens</i>)	...		+							

Species	I					II					III		
	A		B	C		D	E			F			
	Myitkyina		Jossore	Dhurbalia	Kangarh	Digri	Monywa		Amhala	Delhi	Okhla	Darjeeling	
	a	b	a	a	a	a	b	a	b	a	b	b	a
Bronzed Drongo (<i>Chaptia aenea</i>)	...												*
Hair-crested Drongo (<i>Chibia holtentotta</i>)	...	*											*
Blyth's Reed Warbler (<i>Acrocephalus dumetorum</i>)	...		*	†					*				
Tailor Bird (<i>Orthotomus sutorius</i>)	...		*	*			*		*		*		*
Streaked Fantail Warbler (<i>Cisticola juncidis</i>)	...								*				
Franklin's Wren Warbler (<i>Franklinia gracilis</i>)	...								†				
Sykes's Tree Warbler (<i>Hippolais rama</i>) or	}												
Booted Warbler (<i>Hippolais scita</i>)			†						†	†			
Grey-faced Willow Warbler (<i>Phylloscopus maculipennis</i>)	...												†
Yellow-rumped (Pallas' Himalayan) Willow Warbler	...												†
(<i>Phylloscopus proregulus</i>)													
Yellow-browed (Crowned) Willow Warbler	...			†						†			
(<i>Phylloscopus humii</i>)													
Large Crowned Willow Warbler (<i>Acanthopneuste occipitalis</i>)	...							†					
Grey-headed Flycatcher Warbler (<i>Seicercus xanthoschistus</i>)	...												*
Chestnut-headed Flycatcher Warbler (<i>Seicercus castaniceps</i>)	...												*
Strong-footed Bush Warbler (<i>Homochlamys fortipes</i>)	...												*
Rufous-capped Bush Warbler (<i>Horeites brunneifrons</i>)	...												*
Brown Hill Warbler (<i>Suya criniger</i>)	...												*
Black-throated Hill Warbler (<i>Suya atrogularis</i>)	...												*
Streaked Wren Warbler (<i>Prinia gracilis</i>)	...										†		
Ashy Wren Warbler (<i>Prinia socialis</i>)	...			†						†			
Jungle Wren Warbler (<i>Prinia sylvatica</i>)	...									*			
Indian Wren Warbler (<i>Prinia inornata</i>)	...									*			

[illegible]

[illegible]

Species	I					II				III	
	A		B		C	D		E		F	
	Myitkyina	Jessore	Dhubali a	Rangath	Digri	Monywa	Ambala	Delhi	Okhla	Darjeeling	
	a	b	a	a	a	b	a	b	a	b	a
Little Scaly-breasted Green Woodpecker ... (<i>Picus vittatus</i>)			*								
Black-naped Green Woodpecker ... (<i>Picus canus</i>)											*
Small Yellow-naped Woodpecker ... (<i>Picus chlorolophus</i>)											*
Large Yellow-naped Woodpecker ... (<i>Chrysophlegma flavinucha</i>)											*
Pale-headed Woodpecker ... (<i>Gecinulus grantia</i>)											†
Darjeeling Pied Woodpecker .. (<i>Dryobates darjellensis</i>)											*
Himalayan Lesser Pied Woodpecker ... (<i>Dryobates cathpharius</i>)											*
Fulvous-breasted Pied Woodpecker ... (<i>Dryobates macei</i>)											*
Yellow-fronted Pied (Mahratta) Wood- pecker ... (<i>Dryobates mahrattensis</i>)			*	*				*			
Darjeeling Pygmy Woodpecker ... (<i>Dryobates nanus semicoronatus</i>)											*
Red-eared Bay Woodpecker ... (<i>Blythipicus pyrrhotis</i>)											†
Golden-backed Woodpecker ... (<i>Brachypternus bengalensis</i>)			*	*							
Tickell's Golden-backed Woodpecker ... (<i>Chrysocolaptes guttacristatus</i>)			*								*
Speckled Piculet ... (<i>Vivia innominatus</i>)											*
Rufous Piculet ... (<i>Sasia ochracea</i>)											*
Wryneck ... (<i>Jynx torquilla</i>)			*								
Great Himalayan Barbet ... (<i>Megalaima virens</i>)											*
Green Barbet ... (<i>Megalaima zeylanicus</i>)			*					*			
Lineated Barbet ... (<i>Megalaima lineatus</i>)	*		†								
Blue-throated Barbet ... (<i>Megalaima asiatica</i>)	*		*	*							*
Golden-throated Barbet ... (<i>Megalaima franklinii</i>)											*
Crimson-breasted Barbet (Coppersmith) ... (<i>Megalaima haemacephala</i>)	*		*	*	*	*		*			
Asiatic Cuckoo ... (<i>Cuculus canorus</i>)					⊙						*

Species	I					II					III
	A		B		C	D		E		F	
	Myitkyina	Jessore	Dhubalia	Ramgarh	Digri	Monywa	Ambala	Delhi	Okhla	Darjeeling	
	a	b	a	a	a	b	a	b	a	a	
Himalayan Cuckoo (<i>Cuculus optatus</i>)	...									*	
Small Cuckoo (<i>Cuculus poliocephalus</i>)	...									*	
Indian Cuckoo (<i>Cuculus micropterus</i>)	...		*							*	
Large Hawk Cuckoo (<i>Hierococcyx sparveroides</i>)	...		*	*	*					*	
Common Hawk Cuckoo (<i>Hierococcyx varius</i>)	...										
Indian Plaintive Cuckoo (<i>Cacomantis merulinus</i>)	...		†	*						*	
Indian Drongo Cuckoo (<i>Surniculus lugubris</i>)	...									*	
Pied Crested Cuckoo (<i>Clamator jacobinus</i>)	...		*	*			*	*			
Red-winged Crested Cuckoo (<i>Clamator coromandus</i>)	...									*	
Indian Koel (<i>Eudynamis scolopaceus</i>)	...	*	*	*	*		*	*			
Large Green-billed Malkoha (<i>Rhopodytes tristis</i>)	...									†	
Crow-Pheasant (<i>Centropus sinensis</i>)	...		*	*	*				*		
Large Parakeet (<i>Psittacula eupatria</i>)	...		†	†	†						
Rose-ringed Parakeet (<i>Psittacula krameri</i>)	...				†		*	†			
Blossom-headed Parakeet (<i>Psittacula cyanocephala</i>)	...			*							
Roller (<i>Coracias bengalensis</i>)	...	*	*	*	*	*	*	*			
Broad-billed Roller (<i>Eurystomus orientalis</i>)	...									*	
Common Green Bee-eater (<i>Merops orientalis</i>)	...	*	*	*	*	*	*	*			
Blue-tailed Bee-eater (<i>Merops superciliosus</i>)	...						*	*			
Indian Pied Kingfisher (<i>Ceryle rudis</i>)	...		*								
Common Indian Kingfisher (<i>Alcedo atthis</i>)	...		*								
Brown-headed Stork-billed Kingfisher (<i>Ramphalcyon capensis</i>)	...		*	*							
White-breasted Kingfisher (<i>Halcyon smyrnensis</i>)	...		*	*						*	
Hoopoe (<i>Upupa epops</i>)	...	*					*	*		*	

[illegible]

Species	I						II						III							
	A		B		C		D		E		F									
	Myitkyina		Jessore		Dhubalia		Ramgarh		Digri		Monywa		Ambala		Delhi		Okhla		Darjeeling	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	b	a				
Grey Partridge (<i>Francolinus pondicerianus</i>)	...						⊙									*	*	*		
Common Bustard Quail (<i>Turnix suscitator</i>)	...				*															
White-breasted Waterhen (<i>Amaurornis phoenicurus</i>)	...		*		*															
Indian River Tern (<i>Sterna aurantia</i>)	...				*															
Red-wattled Lapwing (<i>Lobivanellus indicus</i>)	...												*							
Green Sandpiper (<i>Tringa ochropus</i>)	...		*																	
Wood Sandpiper (<i>Tringa glareola</i>)	...		*																	
Little Egret (<i>Egretta garzetta</i>)	...								*											
Cattle Egret (<i>Bubulcus ibis</i>)	...		*		*	*	*													
Indian Pond Heron (<i>Ardeola grayi</i>)	...		*		*				*				*							

Note 1. Grey Tit: I am convinced that I saw one member of this species on one of the tea gardens below Darjeeling, but unfortunately I did not make a note of the exact altitude. Until somebody shoots one there, therefore, this record will no doubt not be admitted.

Note 2. Purple-rumped Sunbird: I identified a ♂ and a ♀ beyond all doubt at Ambala on 19th July, 1942, which is some way north of the range given for this species in the *Fauna*.